

Physical Search – Strategy and Tactics

Scope

This guidance document details the methods and procedures to be followed when undertaking a physical search.

USAR Physical Search Strategy

Coordinated physical search requires little or no training and can be performed by virtually anyone on site. However, it can only be used to its full potential with strict management and coordination of the personnel carrying out such a task. This tactic is often the only method of search used by FRS first responders.

Coordinated Physical Search Methods

Line and Hail

Physical search is most effective during daylight hours, and will often uncover the greatest number of accessible casualties at or near the surface. One effective method of physical search is known as the “Line and Hail”, alternating sequences of calling and listening in order to initiate a response from possible casualties.

The process of Line and Hail is carried out as follows:

- Choose an area to search based on intelligence from a USAR assessment team or FRS first responders.
- Appoint a search leader who will control the searchers and call out (hail) into the debris or damaged structure.
- The search leader briefs personnel on the area to be searched and the method of search to be used.
- The searchers form a straight line approximately 2.5 metres apart (this depends on the number of personnel available and the terrain traversed). The search leader will usually be in the centre of the line.
- The search leader calls for silence (one long blast on fog horn). Complete silence in the search area must be obtained. This may involve shutting down machinery, equipment or traffic in the vicinity for an agreed length of time.
- The search leader then calls, “Search and Rescue. Can anybody hear me?”
- Personnel in the line should listen for contact from casualties, which could be voice contact, tapping or other sounds.
- Personnel in the line should also carryout a visual search of their area, for signs of an unconscious casualty, who fails to respond to the initial hail.

If there is no immediate contact, the line should move forward an agreed distance, e.g. 2.5 metres (depending on the number of personnel available and the terrain traversed) on instruction from the search leader.

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The hailing, listening and visual search procedure should then be repeated. If contact is made with a casualty, the person who makes contact should remain in situ, and inform the search leader. Confirmation of the presence and location of the casualty can then be ascertained; either by another hail or through the use of technical equipment or a canine search (see SOP DOG001 Concept of USAR Canine Operations).

Individual Hail (listening circle or triangulation)

The individual hail is similar to the 'hail and line', however calling is undertaken by each individual team member. The purpose of this method is to pinpoint the position of the casualty by reducing the size of the search area with each sound or verbal communication heard, known as triangulation.

- Choose an area to search based on intelligence from a USAR assessment team or FRS first responders.
- Appoint a search leader who will control the searchers. Place personnel around the site, either randomly or in a structured shape, depending on the number of personnel available and the terrain traversed.
- Once the searchers are in place, the search leader calls for silence (one long blast on fog horn). Complete silence in the search area must be obtained. This may involve shutting down machinery, equipment or traffic in the vicinity for an agreed length of time.
- Each searcher calls in sequence, 'Search and rescue. Can anybody hear me?'
- All personnel will then listen for any response, i.e. tapping, shouting, banging etc.
- If no response is detected then each searcher in sequence will tap three times with a hard object on a part of the structure that penetrates the pile, this may make contact with those who cannot hear the hail.
- All personnel will then listen for any response.
- As each searcher calls out, the others should listen and try to establish the location of the response. This will be done by personnel pointing in the direction of the sound they hear.
- Personnel will then gradually move in to the source of the sound or sounds, , eventually triangulating the source.
- Continue the procedure above until the position of casualty(s) has been approximated and pinpointed or it is clear that no response is forthcoming.

It should be stressed that although these methods of search are effective, their success requires that the victims are able to respond to the hail/call. It is imperative that when moving over a rubble pile or incident ground to get close to the ground and actually look into voids. This gives the best chance of making a 'contact' either visually or audibly.

Although these systems will locate surface and readily accessible victims, they do not provide conclusive evidence of a thorough search. Only by operating in coordination with technical search and canine resources can victims buried deeper under the rubble or debris be detected.

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Search Safety

Because physical search operations will include deploying personnel over and around a collapsed site, the environment is potentially dangerous and hazardous. There should be strict levels of command and control, and satisfactory control measures should be applied at the start of any operational task.

A dedicated safety officer must be appointed to monitor the scene throughout the search operation.

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